Guidelines for MR Imaging of Sports Injuries

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Sports Sub-committee

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Contributors

• Ara Kassarjian, Spain
• Lars Benjamin Fritz, Germany
• P. Diana Afonso, Portugal
• Andrea Alcalá-Galiano, Spain
• María José Ereño, Spain
• Andrew Grainger, UK
• Eva Llopis, Spain
• Eugene McNally, UK
• Claudia Schüller-Weidekamm, Austria
• Reto Sutter, Switzerland
Abbreviations and clarifications

- Ax = axial
- Cor = coronal
- Sag = sagittal
- FOV = field of view
- PD = proton density
- TE = time to echo in milliseconds
- FS = fat suppressed
- Int = intermediate
- Int FS: this is a fat suppressed sequence with a long TR and a TE between that of a traditional PD (e.g. TE=10-20) and a traditional T2 (e.g. TE=80-100). The advantage of this sequence is that the TE is short enough to maintain sufficient signal for visualisation of the anatomy (like a PD) yet long enough to be more fluid sensitive (like a T2)
- For STIR sequence, TI (inversion time) should be 140-150 at 1.5T
Hip MR Arthrogram

- Patient is placed with the hips with $15^\circ$ internal rotation, tape toes to maintain position
- Hip MR arthrogram should start with a coronal large FOV 30-40cm of the pelvis from the sacroiliac joints to the pubic symphysis (see routing pelvis protocol)
- This is be followed with lower FOV 18-20cm of the symptomatic hip
- AXIAL PLANES: anterior inferior iliac spine to lesser trochanter
- CORONAL PLANE: anterior to posterior acetabular columns
- AXIAL OBLIQUE PLANE, parallel to the femoral neck
- SAGITTAL PLANE: medial acetabular wall to greater trochanter
# Hip MR Arthrogram

<table>
<thead>
<tr>
<th></th>
<th>FOV (max)</th>
<th>Slice (max)</th>
<th>TE</th>
<th>Matrix (min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>entire pelvis Cor STIR</td>
<td>38-40 cm</td>
<td>6 mm</td>
<td>40-60</td>
<td>256x256</td>
</tr>
<tr>
<td>Ax T1</td>
<td>16 cm</td>
<td>3.5 mm</td>
<td>Min</td>
<td>256x256</td>
</tr>
<tr>
<td>Cor T1 FS</td>
<td>16 cm</td>
<td>3.5 mm</td>
<td>Min</td>
<td>256x256</td>
</tr>
<tr>
<td>Oblique T1 FS</td>
<td>16 cm</td>
<td>3.5 mm</td>
<td>Min</td>
<td>256x256</td>
</tr>
<tr>
<td>Sag T1 FS</td>
<td>16 cm</td>
<td>3.5 mm</td>
<td>Min</td>
<td>256x256</td>
</tr>
<tr>
<td>Sag or oblique Int FS</td>
<td>16 cm</td>
<td>3.5 mm</td>
<td>40-60</td>
<td>256x256</td>
</tr>
<tr>
<td>Radial T1 +/- FS (optional)</td>
<td>16 cm</td>
<td>3.5 mm</td>
<td>Min</td>
<td>256x256</td>
</tr>
</tbody>
</table>
Hip MR Arthrogram

Coronal STIR

Ax T1

Cor T1 FS

Obl Ax T1 FS

Sag T1 FS

Obl Ax (or sag) Int FS